Host Communication and System File Simulation

- Host Communication
- System File Simulation

Host Communication

Communication with a mainframe computer (host) where Natural and Adabas are installed is possible using Natural.

This enables applications to be exchanged without modification, which is achieved by using the SYSOBJH Utility.

System File Simulation

- System Files FNAT and FUSER

To ensure database independence, Natural does not store objects in an Adabas system file. The system file is simulated by a structure of directories on the disk where Natural is installed.

Since the operating system is used instead of a database system file, you do not need Adabas to run Natural.

When installing Natural on your PC or workstation, the path of your Natural root directory is specified in a configuration file.

The Natural libraries are then created as subdirectories below the Natural root directory with the same name as the libraries. The command LOGON is therefore similar to the Change Directory command.

Natural objects are stored as operating-system files in the appropriate directory. The name used for the file takes the form:

XXXXXXXX.N*Kt* **where:**

XXXXXXX	is the name of the object
K	is "S" (for source files), "G" (for generated programs) or "R" (for private resources)
t	is the type of the object; for valid values, see the list below.

> **Note:**
> The file name is not always identical to the object name. Both the actual object name and the corresponding internal object name are documented in the FILEDIR.SAG file.
>
> For example, the source program TESTPROG would be stored as file TESTPROG.NSP, while the generated code for the map TESTMAP would be stored as file TESTMAP.NGM.

The following object types and the respective letters and numbers are to be used for the extensions available:

P	Program
3	Dialog
6	Object view
N	Subprogram
S	Subroutine
C	Copycode
H	Helproutine
T	Text
M	Map
L	Local data area
G	Global data area
A	Parameter data area
4	Class
5	Command processors

The name of a Natural object can consist of the following characters:

Character	**Explanation**
A- Z	alphabetical characters
0 - 9	numeric characters
-	hyphen
@	"at" sign
_	underline
/	slash
$	dollar sign
&	ampersand (not allowed as first character)
#	hash/number sign
+	plus sign (only allowed as first character)

System Files FNAT and FUSER

The Natural system files FNAT (for system programs) and FUSER (for user-written programs) can be located in different subdirectories. They assume the following directory structure:
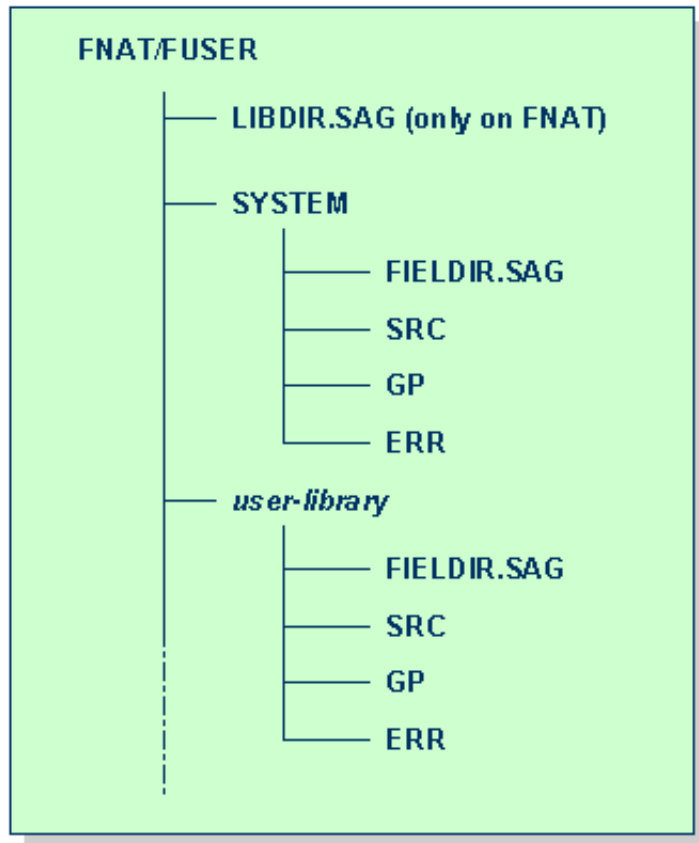
This directory structure is generated during the installation of Natural.

The file LIBDIR.SAG contains information on all further installed Software AG products using Natural. This information can be displayed by using the SYSPROD system command; see the Natural User's Guide for Windows.

The directories representing the system library SYSTEM and each "user-library" contain the following:

- A file FILEDIR.SAG containing library information used by Natural including, in particular, the programming mode of an object (structured or reporting) and internally converted object names.
  These internal object names are automatically created when storing Natural objects to disk with:
  - names longer than 8 characters (which can be the case with DDMs);
  - names containing any special character supported by Natural but not by the operating system.
- Internal object names are unique and consist of an abbreviation of the actual object name and an arbitrary number. Both the actual object name and the corresponding internal object name are documented in FILEDIR.SAG.
  Even if an object is located in the correct directory, it can only be used by Natural after this library information is included in FILEDIR.SAG. For objects created within Natural, the library information is included automatically. Information on how to import other objects can be found in the section Importing Objects in the Natural User's Guide for Windows.
  The utility FTOUCH can be used to update FILEDIR.SAG without entering Natural.

- A subdirectory SRC containing the source objects stored in the library.
- A subdirectory GP containing the generated programs stored in the library.
- A subdirectory ERR containing the error messages stored in the library.
- A subdirectory RES containing the private and shared resources stored in the library.

DDMs can be stored in local libraries (for example, USER*nn*). If DDMs are used by a program, Natural first searches the current library, then the steplibs, and then SYSTEM. If the DDMs are not found, the program does not compile and displays an error message.

> ⚠️ **Warning:**
> **Do not access Natural files with operating system utilities. These utilities might modify and destroy the Natural directory information.**
> **Do not store private data files in the FNAT/FUSER directories, since Natural may delete or modify them in an unexpected way.**
> **Do not use one of the FNAT/FUSER subdirectories as working directories for your Windows applications, since this can cause problems when issuing Natural system commands.**
> **Do not set the directories FNAT and FUSER or files (filedir.sag, for example) to read-only to prevent libraries and their files from being updated. This is not supported by Natural and can cause problems when using system commands and lead to a loss of information.**